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COUNTRY ANALYSIS BRIEFS

Peru

Last Updated: May 2006

Background

Throughout 2005, Peru's mineral and manufactured goods exports helped the economy maintain strong growth.

Peru has achieved a strong economic performance in recent years. The country's gross domestic product (GDP) grew at 6.7 percent in 2005, an increase from the 4.8 percent growth rate of 2004. Analysts predict that the economy will further grow at a 5.1 percent rate during 2006. Despite its high level of economic growth, Peru still suffers from several pressing economic problems. The country's official unemployment rate as of January 2006 was above 10 percent, and many analysts believe that the actual unemployment rate could be much higher. There is also widespread poverty in Peru, especially amongst the country's rural population.

In January 2006, the International Monetary Fund (IMF) completed its third review of Peru under the Stand-By Arrangement, which makes Peru eligible to receive around $300 million in aid from the IMF. In line with the arrangement, Peru has maintained strong GDP growth and has kept the inflation rate (1.6 percent in 2005) within the country's official target range of 1.5 – 3.5 percent. In addition, the IMF noted Peru's positive trade surplus and "comfortable" levels of foreign currency. Throughout 2005, the Peruvian economy benefited from high prices for its mineral exports and a good performance from its export-manufacturing and commerce sectors.

Peru is a member of the Andean Community, set up in March 1996 by leaders of Bolivia, Colombia, Ecuador, Peru, and Venezuela. At that time, the five national leaders expressed their intent to move towards a single market along the lines of the European Union, although significant policy differences will need further consideration. The Community is working towards integrating its member countries' energy sectors, particularly in the electricity and natural gas areas, through network interconnections and harmonized regulatory frameworks. In November 1997, Peru joined the Asia Pacific Economic Cooperation (APEC) forum. In December 2005, Peru signed a Trade Promotion Agreement with the United States to help bolster economic growth in both countries.

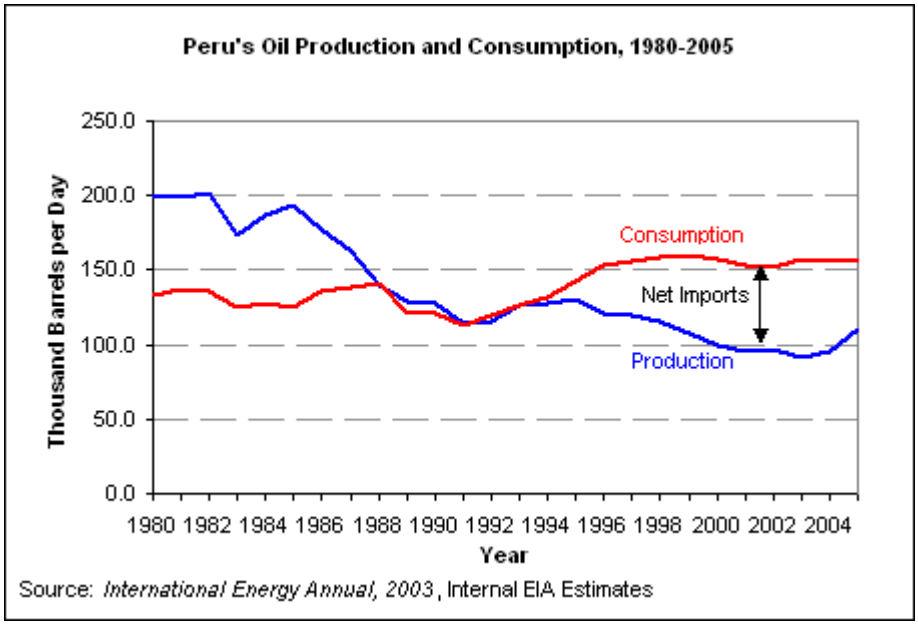
Oil

Peru's oil production has increased in the

Peru has proven crude oil reserves of 930 million barrels, according to *Oil and Gas Journal (OGJ)*.

last two years as new projects have come online.

The country produced 110,900 barrels per day (bbl/d) of oil (including crude oil and natural gas liquids) in 2005, a 15 percent increase from the previous year. With the revival in oil exploration, Peru has had new projects brought online, increasing the country's oil production levels. However, Peru's oil consumption has also grown over the past 20 years, reaching 156,000 bbl/d in 2005. Peru has been a net importer of oil since 1992, with most imports coming from Ecuador and other South American countries.



The largest oil producer in Peru is Argentina-based Pluspetrol, which controls over one-half of the country's entire crude oil production. Other major producers include Occidental Petroleum, Petrobras, and Petro-Tech Peruana. Peru mostly privatized the former state-owned oil company, Petroperu, in 1993. Still, Petroperu continues to control the country's only crude oil pipeline, most of the refineries, and a majority of the retail oil products market.

Exploration and Production

Peru's crude oil production is concentrated in the northern part of the country. In particular, the largest oil blocks are Block 1-AB (Pluspetrol) along the border with Ecuador, Block 8 (Pluspetrol) in the northeastern Amazon region, Block X (Petrobras) in the northwest, and Block Z-2B (Petro-Tech Peruana) off the northwest coast. Block 1-AB and 8 account for over 65 percent of Peru's total crude oil production. Most of crude oil produced in Peru is a heavy, sour variety known as "Lorento," with 20° API and 1.2 percent sulfur cont ent.

In 2005, the Peruvian government signed 15 new exploration and production contracts, and the government hopes to sign an additional 10 by the end of June 2006. Peru awarded the first exploration and production contract of 2006 to Petrolera Monterrico. The award is for Block XX, located in the north. In October 2005, the Peruvian government awarded contracts to Hunt Oil and China National Petroleum Corporation (CNPC) for Blocks 76 and 111, respectively. In March 2005, Global Energy Development, a subsidiary of Harken Energy, signed a new exploration and production contract for Block 95 in the Maranon basin of north-east Peru. The Peruvian government also approved a contract for Burlington Resources in Block 104 of the Maranon basin. Other companies that have recently been awarded exploration contracts in Peru include Nuevo, Energy, Petro-Tech, Petrolifera Petroleum del Peru, and Petrobras.

In June 2005, Petro-Tech announced Peru's first offshore oil discovery, the San Pedro 1X well, which is located in Block Z-2B. The well had initial production of 1,200 bbl/d. Petro-Tech has plans to drill additional wells on Block Z-2B in order to increase production to 11,000 bbl/d. Petro-Tech also plans to expands its offshore exploration at Blocks 6, 33, 35 and 36. In 2004, Occidental Petroleum announced that it had discovered at least 100 million barrels of recoverable reserves in Block 64, located in the Amazon basin; the company also announced that it would increase its investments in Blocks 101 and 103 in the same area.

Pipelines

Petroperu operates the country's sole crude oil pipeline, Norperuano, which links the export terminal at Bayovar to oil fields in Peru's interior. Norperuano has two branches, one (190 miles) starting at San Jose de Saramuro in the Ucayali basin, the other (160 miles) starting at Andoas in the Maranon basin. Both branches meet at a central pumping station, where they join into a 35-inch system that carries crude oil 340 miles to the Pacific coast. Norperuano has a maximum capacity of 250,000 bbl/d. Currently, the pipeline transports about 80,000 bbl/d of oil.

Downstream Activities

Peru has six major oil refineries, according to *OGJ*, with total capacity of 192,950 bbl/d. Repsol-YPF controls the largest facility in the country, La Pampilla, located in Lima, with a capacity of 102,000 bbl/d. The other privately-operated refinery in the country is the 3,250-bbl/d Purcallpa, operated by Maple Gas. Petroperu operates the remaining four refineries and the largest network of retail oil products distribution. According to Peru's Ministry of Energy and Mines, refinery utilization in the country was 79 percent in January 2006. The Peruvian government planned to further privatize downstream facilities, but opposition from labor unions and legislators has delayed these efforts.

Natural Gas

Peru wants to increasingly use natural gas to satisfy the country's energy needs.

According to *OGJ* (1/1/06), Peru has proven natural gas reserves of 8.7 trillion cubic feet (Tcf), the fifth-largest amount in South America. However, Peru's Deputy Minister of Mines and Energy has indicated that once seismic work is complete on Block 56, Peru's proven reserves could increase to 15 -16 Tcf. In 2003, the country produced and consumed 19.8 billion cubic feet (Bcf) of natural gas, a 21 percent increase from the previous year. In coming years, Peru will likely become a net exporter of natural gas as the Camisea project comes fully on-stream (see below). Besides Camisea, the largest concentrations of Peru's natural gas production include the Aguaytia gas field (Maple Gas) in central Peru, Block X (Petrobras) in the northwest region, and Block Z-2B (Petro-Tech) located off the northwest coast. To help mitigate Peru's high oil import bill, the Peruvian government is looking to implement a plan that will stimulate natural gas consumption in the country. The plan targets public and private transportation, by converting vehicles to run on natural gas.

Exploration and Production

Camisea

The Camisea project consists of several natural gas fields located in the Ucayali basin of southeastern Peru, principally in Block 88 along the Camisea River. Analysts estimated that Block 88 contains 11 Tcf of proven plus probable natural gas reserves and 482 million barrels of associated natural gas liquids (NGLs). An international consortium led by Hunt Oil has developed the upstream portion of Camisea, with production beginning in August 2004. The initial production capacity at Camisea was 450 million cubic feet per day (Mmcf/d) of natural gas and 34,000 bbl/d of NGL. However, output capacity is expected to increase once drilling begins (May 2006) on Camisea's Block 56, adjacent to Block 88. Transportadora de Gas del Peru (TGP), a consortium led by Techint, constructed and now operates parallel natural gas and NGL pipelines that carry Camisea production to Lima and to a fractionation plant in Paracas. In March 2006, the Camisea pipeline ruptured for the fifth time since start-up in August 2004. The latest rupture occurred a week after E-Tech International issued a report warning of additional leaks and spills due to quality construction issues of the pipeline. A Peruvian regulatory committee fined TGP $915,000 for the previous four spills.

The Camisea project provides natural gas for domestic consumption; however, natural gas production from the Camisea project will eventually exceed domestic demand, so project sponsors would like to export any excess production. Hunt Oil leads the Peru LNG consortium, which broke ground in January 2006 on a liquefied natural gas (LNG) export terminal at Pampa Melchorita, 105 miles south of Lima. The Peru LNG facility will have an operating capacity of 4.2 million tons per year, with most of the production destined for the Western United States and Mexico. Peru LNG plans to build a pipeline to feed natural gas from existing natural gas pipelines to the LNG export terminal. Construction of the pipeline is expected to start in the latter half of 2006 and to be completed as early as 2008, with first exports leaving the terminal in 2009. Peru LNG has also held discussions with ENAP, Chile's state-owned oil company, about exporting LNG to that country. Even though the countries share a land border, trading natural gas via LNG could be more cost-effective than the construction of a natural gas pipeline. Both countries already have plans to build the necessary LNG infrastructure.

Other Developments

In September 2005, Ecuador's Ministry of Energy signed a Memorandum of Understanding (MoU) with BPZ Energy in which Peru could export up to 1.1 Tcf of natural gas to Ecuador over a 15-year period. Exports of the natural gas could reach Ecuador as early as October 2006. In 2004, BPZ Energy announced that it had reached agreements to send natural gas from its offshore Block Z-1 to power plants in Peru and southern Ecuador. The project would initially supply 74 Mmcf/d of natural gas to three electricity generators in Arenilla, Ecuador, with an eventual extension to Guayaquil. BPZ also planned to construct a gas-fired power plant in Peru that would source gas from the Block Z-1 fields. Analysts estimate that Block Z-1 contains 130 Bcf of proven reserves and at least 3 Tcf of total possible reserves.

Downstream Developments

Pipelines

In November 2005, talks over building a pipeline linking the Camisea project in Peru with northern Chile stalled over a maritime border dispute between the two countries. If talks continue, the project could present an alternative to the aforementioned LNG trading scheme between the two countries. Currently, Chile sources most of its natural gas imports from Argentina, but gas shortages in Argentina have caused several supply disruptions in recent years. The project would depend upon the availability of surplus gas from Camisea, which has already contracted large volumes of future production to domestic needs and LNG export plans. Camisea's operators, though, have stated that there will be enough excess supply for both an LNG terminal and an export pipeline.

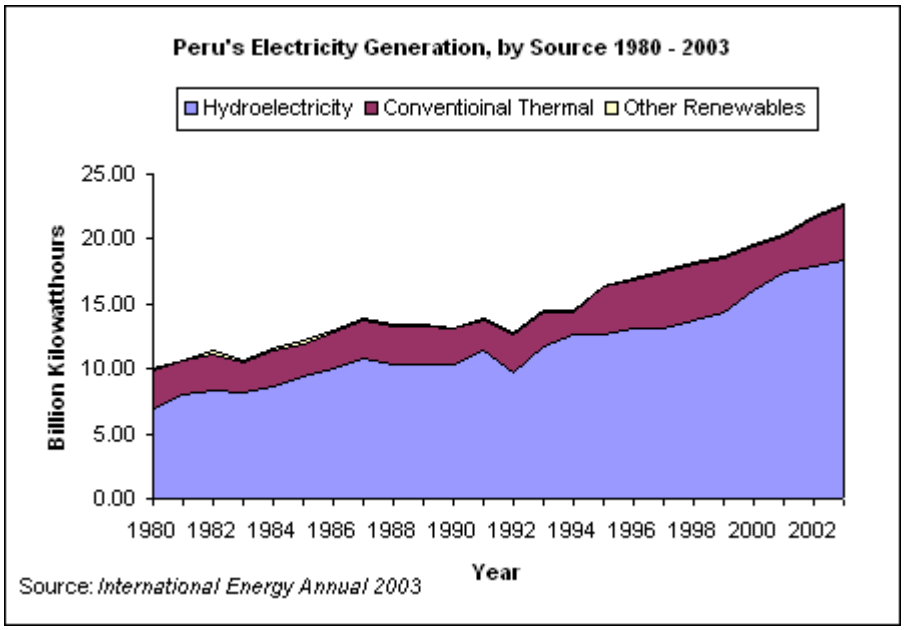
LNG

Besides the Peru LNG project, there have been talks about a potential LNG partnership with Bolivia. That country has the second-largest natural gas reserves in Latin America, but it lacks the coastal access necessary to pursue LNG exports. One proposal under consideration would connect the Margarita gas fields in southern Bolivia to the Peruvian port of Ilo. However, the economic and political feasibility of this proposal is in doubt, and there are no concrete plans to date. For more information on the natural gas sector in Bolivia, please see the Bolivia Country Analysis Brief.

Electricity

The majority of electricity generated in Peru comes from hydroelectricity

Peru had 6.0 gigawatts (GW) of installed generating capacity in 2003. In that same year, the country generated 22.7 billion kilowatthours (Bkwh) of electric power while consuming 21.1 Bkwh. Even though installed capacity is evenly divided between hydroelectricity and conventional thermal electricity, 82 percent of Peru's total electricity supply is generated by hydroelectric facilities, with thermal plants providing supply only during peak usage, or when natural conditions dampen hydroelectric output. The largest hydroelectric facility in the country is the Mantaro Complex in southern Peru, operated by state-owned Electroperu. Two hydroelectric plants at the complex generate over one-third of Peru's total electricity supply from 900 megawatts (MW) of installed capacity. In February 2006, Egecen S.A. completed construction of the 130-MW, Yuncán hydroelectric plant, located northeast of Lima. The Peruvian government awarded operation rights of the plant to EnerSur, a subsidiary of Brussels-based Suez Energy International.



With the start of natural gas production from the Camisea project, the Peruvian government has encouraged greater investment in gas-fired power plants as a way to reduce reliance upon hydroelectricity. In July 2006, BPZ Energy plans to bring online its 140-MW, gas-fired power plant in Caleta Cruz. Panamanian-owned Empresa de Generacion Electrica de Chilca (Egechilcha), plans to build a 520-MW, combined cycle power plant south of Lima. The plant will use natural gas supplied from Camisea. In September 2004, Etevensa, the Peruvian subsidiary of Spain-based Endesa, began a construction upgrade of a combined cycle, gas-fired turbine (CCGFT) at its existing Ventanilla plant, the largest thermal power plant in Peru. The upgrade project increased the capacity of the facility to 380 MW. Many industrial users and independent power producers have also begun transitioning to natural gas.

Sector Organization

In 1992, the Peruvian government enacted the Electric Power Concession Law, which allowed for the privatization of the electricity sector and promoted competition and efficiency within the industry. In addition, large customers could negotiate for electricity directly with generation and distribution companies. Under the new law, Peru privatized the majority of its electricity sector, but opposition from organized labor and rural areas prevented the government from achieving full privatization. The largest generating company in Peru is Electroperu, majority-owned by the Peruvian government, which operates the Mantaro hydroelectricity complex. According to Peru's Ministry of Energy and Mines, the largest private electricity producers in the country include Edegel, a subsidiary of Endesa, and Egenor, a subsidiary of US-based Duke Energy. Around four-fifths of Peru’s electricity is generated by the private sector, which competes for customers in the electricity market.

The Peruvian government maintains financial interests in the power distribution sector, but private companies now hold majority control over the most important distributors in the country. The largest electricity distributor in Peru is Edelnor, a subsidiary of Endesa. According to Peru's Ministry of Energy and Mines, Edelnor served over 890,000 customers in 2003, mostly in the Lima metropolitan area. The second-largest distributor is Luz del Sur, majority-owned by a consortium consisting of PSEG Global and Sempra Energy; Luz del Sur also operates in the Lima area, providing electricity to 700,000 customers in 2003. Smaller distributors owned by the Peruvian government operate in the rest of the country. The government has begun to offer financial incentives to spread electricity service to rural areas, where coverage remains spotty and unreliable. According to the World Bank, an estimated 70 percent of the rural population is without access to electricity.

Peru has two main power transmission grids, one covering the north and center parts of the country, the other serving the south. An interconnector, owned and operated by Hydro-Quebec International, runs between the two along the Pacific coast. The largest transmission company in Peru is the Colombia-based ISA Group, which controls over half of the transmission grid in the country through its subsidiaries Red de Energia del Peru and Interconexion Electrica ISA Peru.

Smaller companies, many of which are state-owned, control the remainder of the grid. Investment in Peru's transmission grid has outpaced actual demand; therefore there is a considerable surplus of spare capacity. Peruvian law ensures that all generating and distributing companies have fair, non-discriminatory access to the national transmission grid.

Regional Integration

Peru has also been in the process of integrating its power grid with those of Ecuador, Chile and Bolivia. These efforts are part of a larger movement by the Andean Community to create a common electricity market. Once the integrated market is operating, the transmission lines will allow for a permanent flow of power between each one of the electric power systems, allowing each country to purchase power under the most favorable conditions. Construction of an interconnector between Peru and Ecuador began in 2003. The transmission line will provide a capacity of 100 MW between the two countries. The Peruvian and Chilean governments have begun negotiations for the construction of an interconnecter between the two countries. The transmission line would allow gas-fired power plants in northern Chile to sell excess electricity supply to Peru, especially when a shortage of rainfall reduces the output of Peru's hydroelectric facilities. Finally, talks of an electricity connection between Peru and Bolivia are in the preliminary stages.

Profile

Country Overview

President	Alejandro Toledo – Peru will have presidential election run-off on May 7, 2006. Candidates include Ollanta Humala, Lourdes Flores and Alan Garcia
Location	Western South America, bordering the South Pacific Ocean, between Chile and Ecuador
Independence	28 July 1821 (from Spain)
Population (2005E)	27,925,628
Languages	Spanish (official), Quechua (official), Aymara, and a large number of minor Amazonian languages
Religion	Roman Catholic 81%, Seventh Day Adventist 1.4%, other Christian 0.7%, other 0.6%, unspecified or none 16.3% (2003 est.)
Ethnic Group(s)	Amerindian 45%, mestizo (mixed Amerindian and white) 37%, white 15%, black, Japanese, Chinese, and other 3%

Economic Overview

Minister of Economy and Finance	Fernando Zavala Lombardi
Currency/Exchange Rate (05/3/06)	1 Nuevos soles (PEN) = US $0.3029
Inflation Rate	(2005E): 1.6%(2006F): 2.9%
Nominal Gross Domestic Product	(2005E): $78 billion
Real GDP Growth Rate	(2005E): 6.7% (2006F): 5.1%
Unemployment Rate	(2005E): 10.4%
External Debt	(2005E): $30.2 billion
Exports	(2005E): $17.2 billion
Exports - Commodities	copper, gold, zinc, crude petroleum and petroleum products, coffee
Exports - Partners (2004E)	US 29.5%, China 9.8%, UK 8%, Chile 5.3%, Japan 4.7%, Switzerland 4.4%
Imports	(2005E): $12.1 Billion
Imports - Commodities	petroleum and petroleum products, plastics, machinery, vehicles, iron and steel, wheat, paper
Imports - Partners (2004E)	US 29.2%, Spain 8.5%, Chile 6.9%, Brazil 5.6%, Colombia 5.2%, China 4%
Merchandise Trade Balance	(2005E): $5.2 billion

Energy Overview

Minister of Energy and Mines	Glodomiro Sánchez Mejía
Proven Oil Reserves (January 1, 2006E)	0.9 billion barrels
Oil Production (2005E)	111.8 thousand barrels per day, of which 67% was crude oil.
Oil Consumption (2005E)	155.8 thousand barrels per day
Crude Oil Distillation Capacity (2006E)	193 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2006E)	8.7 trillion cubic feet
Natural Gas Production (2003E)	19.8 billion cubic feet
Natural Gas Consumption (2003E)	19.8 billion cubic feet
Recoverable Coal Reserves (2003E)	1,168.5 million short tons
Coal Production (2003E)	0.02 million shot tons
Coal Consumption (2003E)	1.4 million short tons
Electricity Installed Capacity (2003E)	5.9 gigawatts
Electricity Production (2003E)	22.7 billion kilowatt hours
Electricity Consumption (2003E)	21.1 billion kilowatt hours
Total Energy Consumption (2003E)	0.6 quadrillion Btus*, of which Oil (57%), Hydroelectricity (33%), Coal (6%), Natural Gas (3%), Nuclear (0%), Other Renewables (0%)
Total Per Capita Energy Consumption (2003E)	20.9 million Btus
Energy Intensity (2003E)	4,217.2 Btu per $2000-PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2003E)	27.2 million metric tons, of which Oil (83%), Coal (12%), Natural Gas (5%)
Per-Capita, Energy-Related Carbon Dioxide Emissions (2003E)	1 metric tons
Carbon Dioxide Intensity (2003E)	0.2 Metric tons per thousand $2000-PPP**
Environmental Issues	deforestation (some the result of illegal logging); overgrazing of the slopes of the costa and sierra leading to soil erosion; desertification; air pollution in Lima; pollution of rivers and coastal waters from municipal and mining wastes
Major Environmental Agreements	party to: Antarctic-Environmental Protocol, Antarctic-Marine Living Resources, Antarctic Treaty, Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Marine Dumping, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94, Wetlands, Whaling signed, but not ratified: none of the selected agreements

Oil and Gas Industry

Organization	Perupetro, which started operating in 1993, is the state company responsible for overall regulation and licensing of the country's oil and gas industries. Perupetro also negotiates oil and gas contracts with companies to explore and/or produce in Peru. Petroperu is the state oil company, and Electroperu is the state electric power company. Regional state-owned electric company Egesur (for the south), as well as state mining company Centromin, are also slated for privatization.

Major Oil/Gas Ports	Callao, Chimbote, Ilo, Iquitos, Matarani, Paita, Pucallpa, Salaverry, San Martin, Talara, Yurimaguas
Foreign Company Involvement	Barrett Resources, Burlington Resources, Coastal, Duke Energy, Empresa de Energia de Bogota, ExxonMobil, hunt Oil, Hyundai, Interconexion Eletrica, Maple Production, Occidental Petroleum, Petrobas, Petro-Tech, Phillips Petroleum, Pluspetrol, Repsol-YPF, Sapet, Shell, SK Corp., Sonatrach, Technit, Tractebel, Transelca.
Major Natural Gas Fields	Camisea and Aguaytia
Major Pipelines	Norperuano crude oil pipeline (250,000 bbl/d capacity)
Major Refineries (capacity, bbl/d)	La Pampilla Lima (102,000); Talara (62,000); Iquitos Loreto (10,500); Conchan (13,500); Pucallpa (3,250); El Milagro (1,700)

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.
**GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

Links

EIA Links

EIA - Country Information on Peru

U.S. Government

CIA World Factbook - Peru
U.S. Commercial Service: "Doing Business in Peru?"
U.S. Country Commercial Guide on Peru
U.S. Department of Energy's Office of Fossil Energy's International section - Peru
U.S. Embassy in Peru
U.S. State Department Background Notes on Peru
U.S. State Department Consular Information Sheet on Peru
U.S. Trade and Development Agency - Latin America and the Caribbean

Foreign Government Agencies

Fonafe
Ministry of Energy and Mines

Oil and Natural Gas

Empresa Petrolera Unipetro ABC
GNLC (Natural Gas of Lima and Callao)
Graña y Montero
Hunt Oil
Maple
Nueva Energy Company
Peruana de Combustibles
Petrobras Energía
Petroperu
Petro-Tech Peruana
SK Corporation
Syntroleum Corporation
Techint
Vopak Serlipsa
PeruPetro

Electricity

Aguaytia Energy Group
Center for Energy Economics - Peru
Edelnor
Egenor (Duke Energy International)
ElectroAndes
Electrolima
Electroperú
Electropuno
Electro Sur Este
Empresa de Energia de Bogota

Empresa de Generación Eléctrica de Arequipa (Egasa)
Energía del Sur (Enesur)
Hydro-Québec TransÉnergie
Interconexión Eléctrica ISA
ISA Perú
Luz del Sur
Red de Energía del Perú
Red Eléctrica de Sur
Transelca

Sources

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Electric Utility Week International
Electroperu
Energy Day
Financial Times
Fonafe
Global Insight
Global Power Report
International Energy Agency
International Oil Daily
International Water Power and Dam Construction
Interpress Service
Latin America Monitor
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Noticias Financieras
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Peru 's Ministry of Energy and Mines
Perupetro
Petroleum Economist
Petroperu
Platts
Reuters
U.S. Energy Information Administration
World Markets Analysis

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